



# Data Taking Statistics

## Week of 2003 April 25 - May 01

Day	Date	Del	Normalizable Luminosity (nb <sup>-1</sup> )			Hours			Norm. Events (k)		Efficiency	
			Util	Rec	Physics	Store	Util	Rec	Rec	Physics	Rec	Phys
Fri	25-Apr-03	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0	0	0.000	0.000
Sat	26-Apr-03	392.04	345.01	270.85	270.85	7.8	7.0	6.2	839	839	0.691	0.691
Sun	27-Apr-03	1026.89	916.27	819.19	819.19	12.4	11.2	10.5	1563	1563	0.798	0.798
Mon	28-Apr-03	1231.74	1200.09	1107.34	1107.34	16.9	16.5	16.0	2165	2165	0.899	0.899
Tue	29-Apr-03	690.23	627.06	581.00	581.00	14.4	12.9	12.6	1751	1699	0.842	0.842
Wed	30-Apr-03	1160.49	1014.72	838.05	825.91	16.1	14.7	14.0	2047	1826	0.722	0.712
Thu	1-May-03	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0	0	0.000	0.000
		4501.4	4103.2	3616.4	3604.3	67.6	62.3	59.3	8365	8092	0.803	0.801

	Recorded Physics Lumi	Efficiency	Physics Events (million)
<b>This Week</b>	<b>3.6 pb<sup>-1</sup></b>	<b>80.1%</b>	<b>8.1</b>
<b>Last Week</b>	<b>5.4 pb<sup>-1</sup></b>	<b>90.2%</b>	<b>12.3</b>
<b>Best Week</b> (2003 March 14-20)	<b>5.8 pb<sup>-1</sup></b>	<b>84.9%</b>	<b>10.7</b>



# Delivered Luminosity Losses

## Major Sources of Downtime & Deadtime (>0.15 hrs)

Apr 25-May 1, 2003	26-Apr-03	13:33	0.55	0.65	PDT Input to L2
	27-Apr-03	2:10	0.75	0.00	LCW Magnet Pump
	27-Apr-03	8:37	0.40	0.25	Calorimeter BLS Crate
	28-Apr-03	2:12	0.23	0.25	HDIs in SMT x67
	29-Apr-03	6:59	0.50	0.00	EM & Track Trigger Rate Test
	29-Apr-03	9:47	0.20	0.00	Jet Energy Scale Special Run
	29-Apr-03	10:57	0.75	0.00	CTT Firmware Special Run
	30-Apr-03	3:25	1.00	0.00	Begin Store 2495; Bad PDT 144 FE; L2 Disable Input
	30-Apr-03	8:23	0.30	0.00	Special Run: New L2/L3 EM Triggers
	30-Apr-03	10:34	0.15	0.00	Jet Energy Scale Special Run

Can we do better and minimize the amount of lost luminosity? Yes!

Diagnosing PDT Failures, and subsequently disabling inputs to L1/L2 should be well defined and take less than 15 minutes, not an hour.

Special runs: Expert must be in the control room, at a terminal, prepared with notes, instructions, prescales, etc. Tuning prescales with a non-recorded run should take less than 5 minutes, not 15-30 minutes.

## Other Losses

- ~0.5 hr: 40 Run transitions (<1 minute/per)
- ~0.5 hr: 10 Begin or End Store transitions (~3 minutes/per)
- ~3 hrs: Average 5% FEB during physics data taking



# Past Week of Stores

- **00:04 - 2 May 2003** **Store 2502 - New Record Run II D0 Luminosity = 40.30E30. ~~NEW~~**
- **19:30 - 30 Apr 2003** End of Store 2495 declared by D0. Beam handed over to Tevatron for end of store studies.
- **03:25 - 30 Apr 2003** Store 2495 - D0 Luminosity = 32.62E30.
- **14:30 - 29 Apr 2003** End of Store 2491 - lost due to BQ9 trip.
- **18:23 - 28 Apr 2003** Store 2491 - D0 Luminosity = 27.40E30.
- **11:19 - 28 Apr 2003** End of Store 2490 - lost due to BQ7 and BQ9 trip.
- **21:38 - 27 Apr 2003** Store 2490 - D0 Luminosity = 32.38E30.
- **12:16 - 27 Apr 2003** End of Store 2487 - lost due to BQ7 trip.
- **02:10 - 27 Apr 2003** Store 2487 - D0 Luminosity = 30.38E30.
- **20:54 - 26 Apr 2003** End of Store 2485 - terminated by the Tevatron.
- **13:06 - 26 Apr 2003** Store 2485 - D0 Luminosity = 18.45E30.

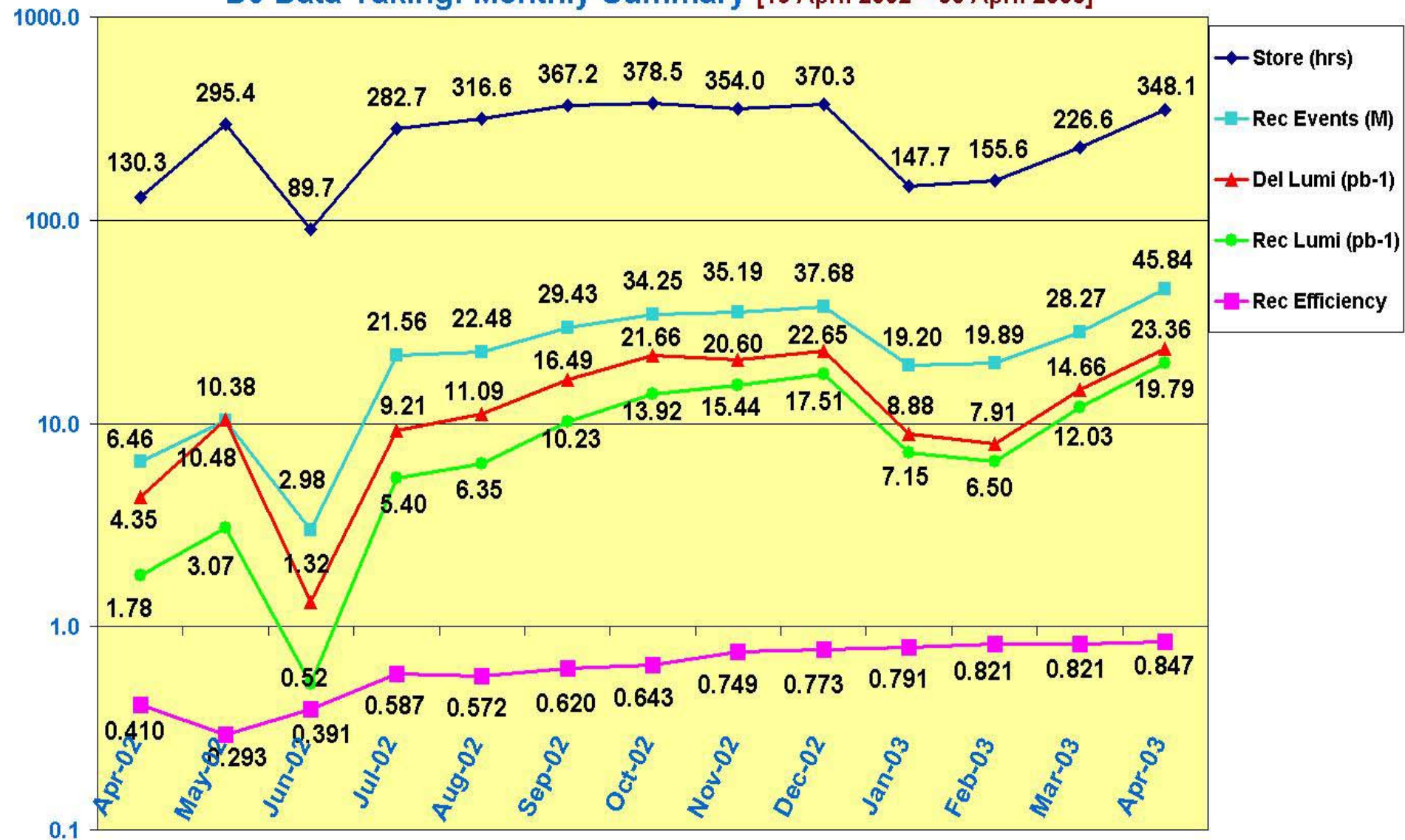
- Previous Record was Store 2328 @39.50E30 at 08:47 20 March 2003
- Tevatron/CDF Luminosity for Store 2502: 42.35/44.40E30



# Other News

- No longer turning off Silicon when ramping up the magnets
  - Shifters have new instructions. Run Plan was updated.
- Transition to single Calorimeter/Muon Shifter has begun
  - Weekly goals to achieve this by end of May
    - Single checklist, merged Cal/Muon Shift Web Page
    - Move FPD responsibilities to CAP or CFT...not yet decided
- Continue with global\_CMT-11.03 trigger list
  - L1/L2/L3 rates are capped at 1200/500/55 Hz
    - Current trigger list with L2/L3 rejections does not permit to exploit the higher L2 limit of 800 Hz
- Unlikely to be scheduled beam studies next week
  - Accelerator needs to catch up with baseline delivered Lumi goal
- Ended April 2003 on an up-note
  - Rec/Del Lumi =  $19.79/23.36 \text{ pb}^{-1} = 84.7\%$

# D0 Data Taking: Monthly Summary [19 April 2002 - 30 April 2003]





# D0 Run IIa Integrated Luminosity

19 April 2002 - 30 April 2003

